

**CALIFORNIA COASTAL COMMISSION**

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# W 14b

**STAFF RECOMMENDATION****ON CONSISTENCY DETERMINATION**

Consistency Determination No.	<b>CD-52-00</b>
Staff:	MPD-SF
File Date:	5/8/2000
45th Day:	6/22/2000
60th Day:	7/7/2000
Commission Meeting:	6/14/2000

**FEDERAL AGENCY:**      **Environmental Protection Agency**

**PROJECT**  
**LOCATION:**

Palos Verdes Shelf, offshore of San Pedro, City and County of Los Angeles (Exhibits 1-3)

**PROJECT**  
**DESCRIPTION:**

Pilot study of in-situ capping using up to 500,000 cu. meters of sand for demonstration capping project (Exhibits 4-7)

**SUBSTANTIVE FILE**  
**DOCUMENTS:**

See page 15.

**EXECUTIVE SUMMARY**

The Environmental Protection Agency (EPA) has submitted a consistency determination for a pilot capping study as part of its ongoing Superfund investigation of the Palos Verdes Shelf. In July 1996, under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) the U.S. Environmental Protection Agency (EPA) began a "Superfund" investigation of the large area of DDT- and PCB-contaminated sediments on the Palos Verdes (PV) Shelf off the coast of the Palos Verdes peninsula. This investigation has included an evaluation of human health and ecological risks posed by the contaminated sediments as well as an evaluation of potential clean-up actions. Based on existing risks to human health

associated with the consumption of contaminated fish from this area, EPA recently proposed various institutional controls (i.e., enforcement of the commercial fishing ban, public outreach and education about the fish consumption advisory, and monitoring) as an interim response action. In the meantime, EPA is continuing its investigation of the feasibility of in-situ (i.e., in-place) capping for all or a portion of the site.

Part of the dredging has already been authorized and found consistent with the Coastal Act in consistency determination CD-54-95 (Army Corps, Queens Gate Main Channel dredging). That project is being modified to include disposal at the PV Shelf location for the portion of this material needed for the pilot capping project. The rest of the dredging needed for the PV Shelf project consists of new dredging work from a borrow site called "Borrow Area AIII." The Army Corps has submitted two negative determinations for these dredging activities (ND-38-00 and ND-51-00), which are being considered together with EPA's consistency determination.

The Commission found the Queens Gate dredging has been found an allowable use under Section 30233(a)(1) because it supported "New or expanded port, energy, and coastal-dependent industrial facilities." The proposed new dredging of AIII borrow site material, as well as the disposal of both types of material in this pilot capping project, are allowable uses under Section 30233(a)(7) because they involve "restoration" activities. EPA has analyzed and incorporated the most appropriate alternatives needed to minimize impacts and refine variables for long-term capping at the site (which would undergo separate federal consistency review with the Commission). EPA has also included monitoring both to detect any temporary project impacts, as well as to generate data for use in the ultimate design of any long-term capping project on the Palos Verdes shelf. The project does not necessitate any mitigation measure beyond the monitoring (and modification in the event the monitoring detects impacts (e.g., cap placement not occurring as predicted, or if resuspension of contaminants exceed expectations)). Therefore, the project is consistent with the marine resources, water quality, and commercial and recreational fishing policies (Sections 30230, 30231, 30233, 30234, and 30234.5 ) of the Coastal Act.

## **STAFF SUMMARY AND RECOMMENDATION**

**I. Project Background.** The Palos Verdes Shelf<sup>1</sup> site consists of a 43 square kilometer (17 square mile) area of DDT<sup>2</sup>- and PCB<sup>3</sup>-contaminated sediments in an offshore area between Point Fermin and Point Vicente (Exhibits 1-3). From 1947 to 1982, the Montrose Chemical Corporation of California, Inc., ("Montrose") manufactured the pesticide DDT at its plant in Los Angeles. Wastewater containing significant concentrations of DDT was discharged from the Montrose plant into the sewers, flowed

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<sup>1</sup> EPA defines the Palos Verdes Shelf as the area where DDT concentrations in the sediment exceed 1 part per million (ppm).

<sup>2</sup> DDT= dichloro-diphenyl-trichloethane

<sup>3</sup> PCB = Polychlorinated biphenyls

through the Joint Water Pollution Control Plant (JWPCP, or “White’s Point”) outfalls, operated by the Los Angeles County Sanitation Districts (LACSD), and was discharged to the ocean waters of the Palos Verdes Shelf. Montrose’s discharge of DDT reportedly stopped in about 1971, and the Montrose plant was shut down and dismantled in 1983.

PCBs from several industrial sources were also discharged into the sewer system. The DDT and PCBs that passed through the treatment plant mixed with the suspended solids in the discharge flowing out of the White’s Point sewer outfalls and settled to the ocean floor to form a large sediment deposit. This deposit covers a large area of the ocean floor (Exhibit 3) between Point Vicente in the northwest and Point Fermin in the southeast.

Historically, the waters of the Palos Verdes Shelf have been used extensively by both sport and commercial fishermen. Sport fishermen angle from party boats, private boats, rocky intertidal areas and sandy beaches. Currently, high levels of DDT and PCBs are found in the active biologic zone of the Palos Verdes Shelf sediments, and fish from the Shelf are contaminated with DDT and PCBs. Generally speaking, contaminant levels are highest in bottom-feeding fish such as the white croaker and are significantly lower in fish that live higher up in the water column.

In 1985, the State of California issued an interim health advisory recommending limitations on the consumption of sport fish and discouraging consumption of white croaker caught in the Santa Monica Bay, the Palos Verdes Shelf, and the Los Angeles/Long Beach Harbor area because of DDT and PCB contamination in the fish. Based on a 1991 study, the CalEPA’s Office of Environmental Health Hazard Assessment (OEHHA) issued a health advisory recommending, in part, the recreational anglers not consume white croaker caught in most areas offshore of Los Angeles County and Orange County, and that anglers greatly limit consumption of a number of other fish species caught on or in the vicinity of the Palos Verdes Shelf due to the levels of DDT and PCBs in fish tissue. These warnings have been included in the California sport fishing regulations since March 1, 1992.

In 1990, the California Department of Fish and Game (CDFG) closed commercial fishing of white croaker on the Palos Verdes Shelf because of the threat to human health posed by the DDT and PCB contamination in these fish. The closure extends from Point Vicente to Point Fermin and from the shoreline out three miles. Concerns exist, however, that some commercial fishing operations are not adhering to the fishing closure and the CDFG does not have sufficient resources to adequately enforce the closure. A 1997 study by Heal the Bay, a local environmental organization, found elevated levels of DDT and PCBs in white croaker (also known as kingfish or tomcod) being sold in a number of Los Angeles and Orange County fish markets. As of March 1998, and in response to concerns about white croaker being illegally sold by sport fishermen to commercial fish markets, CDFG revised the white croaker recreational catch limit from unlimited to a limit of 10 fish per day.

In 1994, the results of multi-year study by the State and Federal natural resource trustee agencies (the “Trustees”) of ecological impacts caused by sediment contamination in the area

offshore of Palos Verdes peninsula were completed and released to the public. In July 1996, following its review of these reports and other available information, EPA began its Superfund investigation of the Palos Verdes Shelf. Through a process known as an Engineering Evaluation/Cost Analysis (EE/CA), EPA is evaluating the need for cleanup action and the potential alternatives for cleaning up the contaminated sediment in this area (Exhibit 10).

**II. Project Description.** EPA has submitted a consistency determination for a demonstration capping project as part of its ongoing Superfund investigation of the Palos Verdes Shelf. The demonstration project consists of placing cap material within a small area of the site (approximately 0.7 square kilometers or 180 acres) using a maximum of 500,000 cubic meters of clean sediment. Sediments used will consist of fine-grain sands and coarse-grain sands. Fine-grain sands will be taken predominantly from the Army Corps/Port of Long Beach Queens Gate/Main Channel Deepening Project. Coarse-grain sands will be taken from a nearby borrow site (identified as "Area AIII" on Exhibit 5). Consequently, in addition to this EPA consistency determination, the Army Corps has submitted two accompanying negative determinations for: (1) modification of the Queens Gate/Main Channel Deepening project to transport most of the dredged material needed for this capping project (ND-38-00); and (2) dredging and transport of up to 20,000 cu. yds. of Borrow Area AIII material needed for this capping project (ND-51-00).

The purpose of EPA's demonstration project is to test varying sediment sizes, capping thicknesses, and sediment disposal (i.e., cap placement) methodologies, with environmental monitoring before, during and after cap placement.

A hopper dredge (the *Sugar Island*), will be used to accomplish all dredging and cap placement for the pilot capping project, because: (1) it contains a split-hull hopper opening mechanism that can be used to control the rate of release; and (2) this dredge is equipped with a hopper pumpout capability over the bow and water jets to aid in pumpout operations. Pumpout can also be accomplished through the adjustable skimmers within the hopper or through one of the two dragarms, allowing for a submerged point of discharge. Any of these methods of placement could potentially be used during the pilot project.

The pilot capping project will be conducted within four 300-by-600 meter placement cells located about midway between Point Fermin and Point Vicente. One pair of cells would be located along the landward edge of the site where the water depth is approximately 40 to 45 meters (m), and the second cell pair would be located adjacent to the seaward limit of the continental shelf in a comparatively deeper area where water depths are 60 to 70 m. The two cells within each pair would be separated by a full cell length in the along-shore direction and by a full cell width in the perpendicular direction (Exhibit 4). The cell grid may be adjusted slightly following the collection and evaluation of baseline data. During the pilot project, placement of cap material would occur within the limits of these four cells, although the area monitored would extend to adjacent areas.

The location of the pilot capping cells within the site was determined based on criteria in the Operations and Monitoring Plan (Exhibit 8). One of the primary criteria used to select the location of the pilot cells was to ensure that the pilot capping project would avoid adverse effects on Los Angeles County's (LACSD) sewer outfall system.

Placement of cap material for the pilot project is scheduled to begin in July 2000 and be completed within approximately three months. Although the initial placement of cap material will occur during daylight hours (to facilitate the associated monitoring work), the bulk of the dredging (from either Queen's Gate or the AIII borrow area) and cap material placement at Palos Verdes Shelf will occur in the course of round-the-clock operations.

Also included is a monitoring program which will collect data before, during and after cap placement. Monitoring of the pilot project will enable EPA to address key short and intermediate term questions relative to capping on the Palos Verdes Shelf. The detailed monitoring will enable EPA to evaluate some of the uncertainties regarding the most effective cap placement methods and the suitability of fine-grained versus coarse-grained sediments for cap construction, as well as the extent of construction-related impacts on the marine environment.

Finally, if the pilot project is successful, EPA may propose capping as a long-term response action for the PV Shelf, in which case (pursuant to the requirements of the Superfund program), EPA would circulate a proposed plan for public comment. EPA would also undergo further federal consistency review with the Commission and consider public comments on its plan before deciding whether to proceed with a cap.

**III. Status of Local Coastal Program.** The standard of review for federal consistency determinations is the policies of Chapter 3 of the Coastal Act, and not the Local Coastal Program (LCP) of the affected area. If the LCP has been certified by the Commission and incorporated into the California Coastal Management Program (CCMP), it can provide guidance in applying Chapter 3 policies in light of local circumstances. If the LCP has not been incorporated into the CCMP, it cannot be used to guide the Commission's decision, but it can be used as background information. The Rancho Palos Verdes LCP has been certified and incorporated into the CCMP. The Los Angeles County and City LCPs have not been incorporated into the CCMP.

**IV. Federal Agency's Consistency Determination.** The Environmental Protection Agency has determined the project to be consistent to the maximum extent practicable with the California Coastal Management Program.

**V. Staff Recommendation.** The staff recommends that the Commission adopt the following motion:

**MOTION:**                **I move that the Commission agree with consistency determination CD-52-00 that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).**

**STAFF RECOMMENDATION:**

*Staff recommends a **YES** vote on the motion. Passage of this motion will result in an agreement with the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.*

**RESOLUTION TO AGREE WITH CONSISTENCY DETERMINATION:**

*The Commission hereby **agrees** with consistency determination CD-52-00 by the Environmental Protection Agency, on the grounds that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the CCMP.*

**VI. Findings and Declarations:**

The Commission finds and declares as follows:

**1. Marine Resources, Water Quality, and Commercial and Recreational Fishing.**

Sections 30230 and 30231 of the Coastal Act provide for the protection of marine resources and water quality. Section 30233 authorizes dredging and filling under certain conditions. Sections 30234 and 30234 provide for the protection of commercial and recreational fishing opportunities. These sections provide:

*30230: Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

*30231: The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where*

*feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

*30233(a): The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to ....*

*(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*

*(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*

*...*

*(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*

*(7) Restoration purposes.*

*(8) Nature study, aquaculture, or similar resource dependent activities.*

*30233(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.*

*30234. Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.*

*30234.5. The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

The proposed activity constitutes dredging and filling of open coastal waters, and as such, along with the overall resource protection and water quality policies of the Coastal Act quoted above, it must also comply with the allowable use, alternatives, and mitigation tests of Section 30233. Part of the dredging has already been authorized and found consistent with the Coastal Act in consistency determination CD-54-95 (Army Corps, Queens Gate Main Channel dredging). EPA and the Corps (in the accompanying negative determination ND-38-00) propose to modify the disposal location for the portion of this material needed for the pilot capping project. The remainder of the dredging is new work and consists of dredging material from a borrow site called "Area AIII" (Exhibit 5 - see also accompanying negative determination ND-51-00). The Commission determined the Queen's Gate dredging an allowable use under Section 30233(a)(1) because it constituted "New or expanded port, energy, and coastal-dependent industrial facilities." The proposed dredging of AIII borrow site material, as well as the disposal of both types of material in this pilot capping project, constitute an allowable use under Section 30233(a)(7) as a "restoration" project, because it would restore the area as nearly as possible (without incurring greater environmental damage) to the condition it was in prior to the DDT and PCB discharges.

Moving to the alternatives analysis, as described below EPA and the Army Corps have conducted detailed studies of available options for remediating Palos Verdes Shelf contamination problems. EPA states:

*In-situ capping is defined as the placement of a covering or cap of clean material over the deposit of contaminated sediment, thereby isolating it from the environment and preventing DDT and PCBs in the sediment from diffusing into the water column and/or entering the food web. An initial assessment of the technical feasibility of in-situ capping was included in the overall evaluation of options for sediment remediation completed in 1994 as part of the Southern California Natural Resources Damage Assessment (Palermo, 1994). A number of options for sediment restoration have been evaluated as part of EPA's investigation of the PV Shelf (USEPA, 1997), and EPA has identified in-situ capping as the most feasible response action that could be taken in the near term to address human health and ecological risks at the site. In-situ capping is a proven technology that is effective for isolating contaminated sediments.*

*As part of EPA's investigation, the U.S. Army Corps of Engineers (USACE) Waterways Experiment Station (WES) performed a detailed evaluation of the feasibility and effectiveness of in-situ capping options for the Palos Verdes Shelf. The evaluation included prioritizing areas of the PV Shelf to be capped, determining appropriate cap designs, developing a general operations plan for placement of the cap, developing a monitoring plan to ensure successful cap placement and assess long term cap effectiveness, and developing preliminary cost estimates. The complete capping options study is published as a WES report titled "Options for In Situ Capping of Palos Verdes Shelf Contaminated*



*Sediments*<sup>4</sup>). ... The results of the WES study were incorporated into an Engineering Evaluation/ Cost Analysis (EE/CA) report prepared by EPA to evaluate the need for response actions such as in-situ capping and to evaluate the feasibility of capping options (USEPA, 2000).

These alternatives evaluations looked at a broad spectrum of potential actions, including “no action,” institutional controls, direct removal and treatment of the material, and various alternative forms of capping (summarized in chart form in Exhibit 10). Institutional controls include recreational fishing advisories (already in place), as well as: (1) improved enforcement and monitoring of fisheries controls; (2) increased awareness and effectiveness through public education and outreach programs; and (3) expanded fisheries controls by increasing the area of the closure. These controls are being considered in the interim, because capping would not achieve immediate reductions in DDT or PCB levels in fish tissue. However, EPA does not believe they would adequately reduce present ecological risks and, therefore, that taken alone they would fail to fully achieve the response objectives.

In situ containment (or capping) is proposed in this consistency determination for the PV shelf, and will possibly be the long-term measure selected, but not for the slope seaward of the shelf (Exhibit 2). EPA believes that capping sediment on the slope is infeasible due to seismic instability.

Removal and treatment (or disposal) alternatives include: (1) confined disposal facilities (without treatment); (2) contained aquatic disposal (without treatment); (3) disposal in deep, offshore basins (without treatment); (4) disposal at permitted upland sites (without treatment); and (5) various treatment technologies followed by landfill disposal. Confined and contained disposal alternatives were rejected due to significant adverse environmental impacts, high costs relative to in-place capping, and inconsistency with state and federal environmental laws. Deep ocean disposal was rejected because dredged sediments would not meet existing standards for ocean disposal (in addition, a new ocean disposal site would need to be designated). Upland disposal alternatives were rejected due to prohibitive costs (see Exhibit 10), the need for extensive treatment, and limited landfill capacity or suitable areas for upland treatment. The Commission agrees with EPA that, given the currently available information, in-situ capping appears to be the least environmentally damaging feasible response action that could be taken in the near term to address human health and ecological risks at the site.

Concerning the proposed pilot demonstration project itself, the project is being proposed to assist in the alternatives analysis for the long-term capping. Alternatives under consideration for the pilot project are limited to the type of dredge plant, methods of disposal, grain size alternatives, and cap area and thickness. EPA states:

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<sup>4</sup> Report number TR-EL-99-2, available via the WES web site at <http://www.wes.army.mil/el/elpubs/pdf/trel99-2.pdf> (Palermo et al., 1999)

*The proposed pilot project involves dredging and transporting clean sediments to the PV Shelf site where they will be disposed in a controlled manner to construct a demonstration cap over a small area within the contaminated sediment deposit. The proposed pilot project will allow EPA to evaluate cap construction methodologies and short-term impacts in the field. WES technical studies have evaluated the feasibility of in-situ capping at the Palos Verdes Shelf (Palermo et al., 1999), but there are many site-specific factors (e.g., water depth, slope, and the soft-bottom nature of the site) that justify a demonstration project prior to commitment of funds to a full-scale capping project. The detailed monitoring that will be conducted as part of this demonstration project will enable EPA to evaluate some of the uncertainties regarding the most effective cap placement methods and the suitability of fine-grained versus coarse-grained sediments for cap construction, as well as the extent of construction-related impacts on the marine environment.*

Concerning capping thickness and cap area options, EPA states:

*Two capping approaches were considered in TR EL-99-2 for selected areas of the shelf: 1) placement of a Thin Cap (design thickness of 15 cm) which would isolate the contaminated material from shallow burrowing benthic organisms, providing a reduction in both the surficial sediment concentration and contaminant flux, and 2) placement of an Isolation Cap (design thickness of 45 cm) which would be of sufficient thickness to effectively isolate the majority of benthic organisms from the contaminated sediments, prevent bioaccumulation of contaminants and effectively prevent contaminant flux for the long term.*

*The shelf area presently under consideration for capping lies between the 40- and 70-m depth contours (in TR EL-99-2, this area was defined as two separate capping prisms: prism A centered over the "hot spot", and prism B located northwest of the "hot spot"). If capping is selected as a remedy for the PV Shelf, the operations would be done in an incremental fashion until the total selected area was capped. Since the area that is being considered for capping is large (on the order of several square kilometers), capping placement cells 300 by 600 m have been defined for purposes of managing the placement of material and monitoring.*

Concerning dredge equipment alternatives, EPA states:

*A hopper dredge will be used to accomplish all dredging and cap placement for the pilot capping project. A hopper dredge is preferable for several reasons, including:*

1. *Hopper dredges provide better control of placement in the open ocean environment and allow for more flexibility in placement options to include pumpout capabilities; and*
2. *Hopper dredges remove material from channels by hydraulic means, resulting in a breakdown of any hardpacked material and addition of water as material is stored in the hopper for transport. Material from hopper dredges is therefore more easily dispersed in the water column, and would settle to the seafloor with less energy and less potential for resuspension of the contaminated sediment.*

Finally, concerning dredge site alternatives, the Queens Gate/Main Channel is already being dredged. Moreover, the Army Corps notes in its Draft Environmental Assessment for Borrow Area AIII dredging (submitted with ND-51-00) that alternative dredge sites for these coarser sediments would be more environmentally damaging because they would necessitate greater transportation distances (i.e., they are farther to the east – see Exhibit 5), thereby increasing air quality impacts and fuel usage.

Given the above discussion, the Commission agrees with EPA that the project represents the least environmentally damaging feasible alternative and, further, that the project is designed to assist future alternatives analysis to enable any *long-term* capping activity to be implemented in the least environmentally damaging manner.

Concerning the mitigation test of Section 30233, the material proposed for disposal has been tested and is suitable for open ocean disposal. The Queens Gate/Main Channel material was tested prior to Commission concurrence with the Army Corps' original consistency determination for that project (CD-54-95). The Corps and EPA tested the Borrow Area AIII material this year. While disposal of the clean sandy material should only involve short term turbidity and smothering impacts, impacts generally considered insignificant absent the presence of environmentally sensitive habitat, the potential for resuspension of the underlying contaminated sediments must be weighed against the habitat benefits of capping the contaminated sediments. EPA analyzes these project impacts as follows:

#### *Oceanography and Water Quality*

*The pilot capping project will result in impacts to the area where the pilot cap is constructed (i.e., the Palos Verdes Shelf). Temporary physical and chemical changes in water quality characteristics will occur because of stripping losses during placement of cap material, resuspension of cap material when it impacts the ocean floor, and the potential resuspension of the contaminated Palos Verdes Shelf sediments. Impacts may include increases in turbidity and suspended solids levels in the immediate vicinity of capping operations. Increased turbidity would*

*result in a decrease in light penetration. High levels of turbidity are usually restricted to the immediate vicinity of the capping area and tend to dissipate rapidly.*

*Stripping losses (i.e., the slow settling of finer grain size particles) would be greater for Queen's Gate sediments than for the AIII sediments. The primary method of placing Queen's Gate sediments will be through conventional disposal (i.e., point dumping) in order to minimize stripping losses. If a spreading method of placement is used with these sediments, it will be by pumping out the hopper through the lowered drag arm of the hopper dredge. Such an approach will make the effective point of release approximately 80 feet below the water surface, thereby minimizing any water quality impacts in the upper water column.*

*The DDT- and PCB-contaminated sediments on the Palos Verdes Shelf are present as a result of the discharge of these contaminants in partially-treated wastewater, or effluent, from the Los Angeles County sewer system through the ocean outfall pipes off Whites Point. The resulting effluent-affected sediment is fine-grained, with a higher organic carbon content than native sediments. DDT and PCB levels in the water over the Palos Verdes Shelf, although very low due to the hydrophobic nature of these contaminants, are still above both the California Ocean Plan water quality objectives and federal water quality criteria. Resuspension of contaminated sediments may result in desorption and a temporary increase in DDT and PCB levels in the water column in the immediate vicinity of the capping cell.*

*It is our best professional judgment that resuspension and/or desorption of contaminants as a result of capping activities will be negligible in magnitude and highly localized. One of the objectives of the pilot capping project is to assess the scope and extent of resuspension and/or desorption prior to committing resources to a full-scale capping effort. Monitoring and cap placement have been designed so that if significant resuspension and/or desorption occurs, it will be detected early and either measures will be taken to prevent such resuspension/desorption, or the project will be halted pending further analysis of monitoring data and consultation with the appropriate agencies. [Emphasis added]*

#### *Marine Resources*

*Cap placement activities will cause a disturbance and some redistribution of bottom sediments in the vicinity of the cap placement cells during the period of cap placement (approximately 3 months). Some invertebrates within the cap footprint, especially small crustaceans and benthic infauna, may be smothered, while motile organisms would relocate to areas outside the zone of impact. Invertebrates, epifauna and infauna may be exposed to elevated suspended sediment concentrations during cap placement. These conditions may cause some*

*clogging of gills and suspension feeding apparatuses, resulting in smothering of invertebrates outside the cap footprint but within the immediate vicinity. Invertebrate populations are expected to recover upon completion of the pilot project, although the distribution of species in the cap footprint may be somewhat altered because of the different physical and chemical nature of the cap material. To the extent that benthic organisms in the pilot cell area are serving as a mechanism for DDT and PCB in the sediments to enter the food chain, their elimination and replacement with organisms living in the cleaner cap material will have a positive effect on the marine ecosystem.*

*Suspended solids from the pilot capping project may be carried by onshore currents towards the kelp beds that are present along the Palos Verdes peninsula. As part of its Feasibility Study of options to control impacts from the ongoing Portuguese Bend landslide, USACE has studied the kelp beds and determined that, due to the landslide, they are somewhat degraded. The landslide is a constant source of turbidity to those kelp beds. Nevertheless, the kelp beds are still doing well. Due to the distance and short-term nature of the pilot capping project, EPA believes that there will not be any significant impacts to kelp beds. However, as part of the monitoring program, EPA will be evaluating the transport of suspended solids from the pilot capping area to the kelp beds.*

*Threatened and endangered species: The following listed species may occur in the study area of this project:*

- ? *California least tern (Stern antillarum browni) - endangered*
- ? *Brown pelican (Pelecanus occidentalis) – endangered*
- ? *Bald eagle (Haliaeetus leucocephalus) - threatened*
- ? *Peregrine falcon (Falco peregrinus) – delisted, species of concern*

*EPA has determined that cap placement will take place in deep water sufficiently removed from the shallow water foraging areas used by the California least tern so as to have no effect on this listed species. EPA has also determined that the placement of dredged materials at the Palos Verdes Shelf will not have an effect nor jeopardize the continued existence of any other federal listed threatened or endangered species. Formal consultation pursuant to Section 7 of the Endangered Species Act is not required for this pilot project implementation.*

In addition to this impacts analysis, EPA has included monitoring for both temporary project impacts, as well as for further assisting the ultimate design of any long-term capping project on the Palos Verdes shelf. EPA has incorporated an “Operations and Monitoring Plan (Appendix B) (Exhibit 8), which describes the overall scope and objectives of the cap placement monitoring plan. The monitoring/sampling techniques will include sediment cores, shear strength tests on sediment core subsamples, side-scan sonar, sediment profiling, fixed (bottom-moored) and ship-deployed optical back scatter (OBS)/acoustic Doppler current profile

(ADCP) meter arrays, and water column samples. EPA will also collect hopper dredge operation data that includes positioning during placement, load volume, time to release material, and samples of hopper inflow and overflow for grain size and other geotechnical properties.

The monitoring program will collect data before, during and after cap placement. The monitoring plan has been designed to enable the EPA to address key short and intermediate term questions relative to capping on the Palos Verdes Shelf, including:

1. Does placement occur as modeled (e.g., how far does the cap material spread, how many loads does it take to achieve a desired cap thickness, what are the effects of water depth, slope and material type, and are there any indications of turbidity flows or mudwaves)?
2. Can a uniform cap be constructed?
3. Can disturbance to in-place sediments be kept within tolerable limits?
4. Does the cap remain clean?
5. Does the cap remain stable during and after placement?

EPA further states:

*The construction of the field pilot study cap is anticipated to occur over a time period of several weeks, and the associated monitoring effort will focus on short term processes associated with cap construction. The pilot study would therefore meet several objectives related to capping operations and processes occurring during and shortly after cap material placement. A full-scale monitoring program to be conducted during any placement of a full-scale cap and in the years to follow would additionally include activities aimed at long-term processes which could not be easily observed during the time period available for a pilot study (e.g. erosion during storm events or migration of contaminants due to diffusive processes). Depending on the time scales in which the pilot cap is left in place prior to any full scale cap placement, there may be opportunity to obtain data from the pilot area related to such long-term processes, but such activities are not included in the present pilot scope.*

Concerning longer-term monitoring, EPA further states:

*The monitoring scope that has been developed for the Pilot project does not include far field or long term monitoring, though this scope will be prepared when requested by the EPA project managers. TR EL-99-2 [Options for In Situ Capping of Palos Verdes Shelf Contaminated Sediments] provides the outline for that effort, but briefly, it would include coring, sediment profile camera surveys, and sub-bottom profiles.*

*Several other items related to monitoring are not explicitly addressed in this plan. This includes determination of the abundance of deep burrowers, reductions in water column contaminant concentrations, verification of the diffusion model, and reductions in tissue levels in resident benthic or fishery species. If EPA decides to proceed with a full-scale capping remedy, a detailed monitoring program to address long term questions would be included.*

Heal the Bay has commented on EPA's proposal (Exhibit 9) and requested additional data gathering, including longer term monitoring, as well as experimenting with a thicker cap, dredging during "worst-case" tidal conditions, disposal in areas with deep burrowing organisms, monitoring benthic communities and kelp beds. Nevertheless, Heal the Bay also states that it "... supports EPA's decision to move to a pilot capping approach in order to provide additional information before final remediation decisions are made."

Finally, EPA has agreed to submit its monitoring reports to the Commission staff when they are available. In conclusion, with the monitoring plan incorporated into the project, the Commission finds that the project represents an allowable use under the Coastal Act, is the least environmentally damaging feasible alternative, and does not necessitate any mitigation measures beyond the monitoring (and modification (subject to potential further consistency review) in the event the monitoring detects impacts (e.g., cap placement not occurring as predicted, or if resuspension of contaminants exceed expectations)). The Commission therefore concludes that the project is consistent with the marine resources, water quality, and commercial and recreational fishing policies (Sections 30230, 30231, 30233, 30234, and 30234.5 ) of the Coastal Act.

## **VII. SUBSTANTIVE FILE DOCUMENTS:**

1. *Environmental Information Document for Pilot Cap Placement, Palos Verdes Shelf Capping Demonstration Project*, U.S. Environmental Protection Agency, May 2000.
2. *Options for In Situ Capping of Palos Verdes Shelf Contaminated Sediments*, Technical Report EL-99-2, U.S. Army Engineer Waterways Experiment Station, Palermo, Michael, Paul Schroeder, Yilda Rivera, Carlos Ruiz, Doug Clarke, Joe Gailani, James Clausner, Mary Hynes, Thomas Fredette, Barbara Tardy, Linda Peyman-Dove, and Anthony Risko, Vicksburg, MS., 1999.
3. *Screening Evaluation of Response Actions for Contaminated Sediment on the Palos Verdes Shelf*, U.S. Environmental Protection Agency, July 1997.
4. Consistency Determination CD-54-95, Army Corps, Main Channel Deepening project.

5. Negative Determination ND-63-98, Army Corps, Modifications to Main Channel Deepening project.

6. Negative Determination ND-38-00, Army Corps, Modifications to Main Channel Deepening project for EPA pilot capping project.

7. Negative Determination ND-51-00, Army Corps, Dredging/Transportation of AIII Borrow Site material for EPA pilot capping project.

8. *Draft Environmental Assessment for Borrow Site Dredging and Transportation, Palos Verdes Shelf Capping Demonstration Project*, U.S. Army Corps of Engineers, May 2000.

9. *Draft Supplemental Environmental Assessment for Palos Verdes Shelf Capping Demonstration Project*, U.S. Army Corps of Engineers, April 2000.